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The session was opened by Academician-Secretary I. G. Petrovskiy, who introduced Frederic Joliot-Curie to the assembly.

After Joliot-Curie's speech, the assembly heard two lectures: Candidate of Physicomathematical Sciences V. B. Nikonov's "Observations of the Galactic Center," and Doctor of Physicomathematical Sciences A. M. Obukhov's "Results of Investigations into the Microstructure of Winds and the Temperature Field in the Atmosphere."

Nikonov stated that the question of our galaxy's being an extragalactic nebula is of considerable cosmological interest. He discussed the allied works of A. A. Kalinyak and V. I. Krasovskiy and described the observational methods employed by the Crimean Astrophysical Observatory in 1948-49, which give for very small-scale images sufficient details completely comparable to those obtained by electrophotometrical means with large reflectors.

The lecturer pointed out that data from a small number or negatives are insufficient for constructing a definite system of isorhots of the galactic center; study, however, of the photometric structure of its radiation around 10,000 A permits one to detect another large bright nebula, beside the one in the constellation Sagittarius, on the other side of the galactic equator. The size and disposition of these two nebulas prove that our galactic system belongs to the spiral nebulas (extragalactic) of the intermediate type.

The second lecturer, A. M. Obukhov, noted the basic results obtained from working with the theory of locally isotopic turbulences, which has been created by Soviet scientists over the past 10 years. He stressed the importance of these investigations in solving certain problems of geophysics, particularly for explaining the laws governing the microstructure of winds and the atmosphere's temperature field.

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The main role in these investigations is played by the "structural function," i.e., the dependence of the mean square difference of pulsations of the field characteristics upon the distance between the points of measurement. He pointed out the apparent relation between the structural function and the energy distribution (spectrum), and discussed the theoretical investigations into the structural functions of velocity and temperature fields in a turbulent current, which were carried out by Academician A. N. Kolmogorov, A. M. Yaglom, and Obukhov. He also noted the difficulty of studying experimentally the structure of turbulent flow under laboratory conditions (in aerodynamic tunnels).

To study experimentally the microstructure of winds and the temperature field, the Geophysical Institute of the Academy of Sciences USSR has developed special devices (differential thermoanemometer and microthermometer) which possess very small inertia of the order of 0.01 sec and high sensitivity. As a result, theory has been found in rather close agreement with the experimental data thus obtained. Studies of the structural functions of the wind field have been conducted 1, 3, 5, 15 meters above ground, taking into account the inertia of the transmitter.

In conclusion, Obukhov related the significance of these results to atmospheric acoustics and to studies of the phenomena of fog coagulation and stressed the great importance to meterorology of new methods being worked out in the Geophysical Institute for measuring the vertical velocity component of wind and temperature pulsations, which are applicable to the direct determination of turbulent heat flow in the atmosphere.

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